

## ABSTRACT

A metrology system for characterizing three-dimensional structures and methods for manufacturing and using same. The metrology system includes a measurement system that preferably comprises an energy source and energy detector and that is in communication with a processing system. Under control of the processing system, the metrology system rotates the measurement system relative to a structure while the energy source directs a beam of incident energy toward the structure. The incident energy rebounds from the structure as scattered energy, at least a portion of which propagates toward the energy detector. Due to the relative rotation, the energy detector receives scattered energy from the structure at a plurality of angles, and the measurement system produces data signals therefrom, which data signals are provided to the processing system. The processing system analyzes the data signals to determine whether the structure has any defects, such as yield limiting deviations or other processing defects.